In the Claims:

The currently pending claims are as follows:

1-24. (canceled)

25. (previously presented) Method for arc welding with a consumable electrode under a protective gas, comprising the steps of:

providing a first part made of ductile cast iron and a second part made of ductile cast iron or steel to be joined;

providing a protective gas contains at least one of carbon dioxide in a range of 1 to 25 vol% and oxygen a range of 0.5 to 10 vol%, and the remaining volume of protective gas comprises one of argon and an argon-helium mixture; and

arc welding the first and second parts together with the consumable electrode under the protective gas.

26. (previously presented) Method as claimed in Claim 25, wherein two welding wires are used in the arc welding step to produce a joint.

27. (previously presented) Method as claimed in Claim 25, wherein carbon dioxide is added to the protective gas in an amount of 1 to 15 vol%.

28. (previously presented) Method as claimed in Claim 25, wherein carbon dioxide is added to the protective gas in an amount of 2 to 10 vol%.

29. (previously presented) Method as claimed in Claim 25, wherein oxygen is present in the protective gas in an amount of 1 to 3 vol%.

30. (previously presented) Method as claimed in Claim 25, wherein nitrogen monoxide is additionally added to the protective gas.

31. (previously presented) Method as claimed in Claim 25, wherein helium is present in the protective gas at 10 to 60 vol%.

32. (previously presented) Method as claimed in Claim 25, wherein helium is present in the protective gas at 20 to 50 vol%.

33. (previously presented) Method as claimed in Claim 25, wherein helium is present in the protective gas at 30 to 40 vol%.

34. (previously presented) Method as claimed in Claim 25, wherein a corona arc is used in the arc welding step.

35. (previously presented) Method as claimed in Claim 25, wherein a free electrode length of at least 15 mm is used.

36. (previously presented) Method as claimed in Claim 25, wherein pulsed arc welding is used in the arc welding step.

37. (previously presented) Method as claimed in Claim 25, wherein a wire feed rate of 10 to 50 m/min is used in the arc welding step.

38. (previously presented) Method as claimed in Claim 25, wherein a wire feed rate of 15 to 30 m/min is used in the arc welding step.

39. (previously presented) Method as claimed in Claim 25, wherein a wire diameter of 0.8 to 2.0 mm is used in the arc welding step.

40. (previously presented) Method as claimed in Claim 25, wherein a wire diameter of , 1.0 to 1.6 mm is used in the arc welding step.

41. (previously presented) Method as claimed in Claim 25, wherein an arc voltage of more than 28 V is used in the arc welding step.

42. (previously presented) Method as claimed in Claim 25, wherein an arc voltage in a range of 32 V to 45 V is used in the arc welding step.

43. (previously presented) Method as claimed in Claim 25, wherein a current of 220 A to 500 A is used in the arc welding step.

44. (previously presented) Method as claimed in Claim 25, wherein a current of 260 A to 450 A is used in the arc welding step.

45. (previously presented) Method as claimed in Claim 25, wherein the first and second parts are joined by a weld joint created from at least two weld layers in the arc welding step.

46. (previously presented) Method as claimed in Claim 25, wherein at least the ductile cast iron parts are preheated to temperatures of 200°C to 250°C before the arc welding step.

47. (currently amended) Method ~~as claimed in Claim 25,~~ for arc welding with a consumable electrode under a protective gas, comprising the steps of:

providing a first part made of ductile cast iron and a second part made of ductile cast iron or steel to be joined;

providing a protective gas contains at least one of carbon dioxide in a range of 1 to 25 vol% and oxygen a range of 0.5 to 10 vol%, and the remaining volume of protective gas comprises one of argon and an argon-helium mixture; and

arc welding the first and second parts together with the consumable electrode under the protective gas,

wherein the joined parts are cooled in diatomaceous earth after the arc welding step.

48. (previously presented) Method as claimed in Claim 25, wherein the joined parts are heated to temperatures between 500 and 900°C for 1 to 3 hours after the arc welding step.

49. (withdrawn) Protective gas mixture for arc welding of ductile cast iron with a consumable electrode, comprising:

at least one of carbon dioxide in a range of 1 to 25 vol% and oxygen a range of 0.5 to 10 vol%; and

one of argon and an argon-helium mixture.

50. (withdrawn) Protective gas mixture as claimed in Claim 49, wherein the protective gas contains 1 to 15 vol% carbon dioxide.

51. (withdrawn) Protective gas mixture as claimed in Claim 49, wherein the protective gas contains 2 to 10 vol% carbon dioxide.

52. (withdrawn) Protective gas mixture as claimed in Claim 49, wherein the protective gas contains 1 to 3 vol% oxygen.

53. (withdrawn) Protective gas mixture as claimed in Claim 49, wherein the protective gas contains nitrogen monoxide.

54. (withdrawn) Protective gas mixture as claimed in Claim 49, wherein the protective gas contains 10 to 60 vol% helium.

55. (withdrawn) Protective gas mixture as claimed in Claim 49, wherein the protective gas contains 20 to 50 vol% helium.

56. (withdrawn) Protective gas mixture as claimed in Claim 49, wherein the protective gas contains 30 to 40 vol% helium.